

# ESTUARIES & COASTAL WETLANDS OF LAKE SUPERIOR

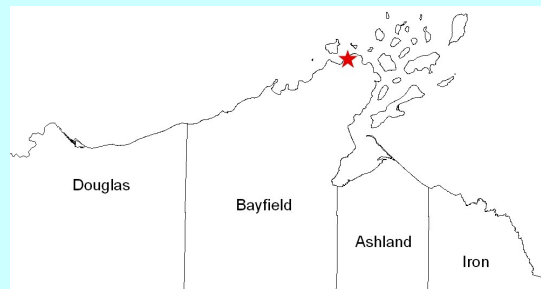
## Little Sand Bay

Approximate Size: 12 acres\*

Ownership: National Park Service

Year Last Surveyed by WDNR/NHI: 2012

GLCWC Classification: Barred Drowned River Mouth



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### Site Description

Little Sand Bay is a freshwater estuary located within the Apostle Islands National Lakeshore in northern Bayfield County. The site is distinguished by its barrier lagoon which has formed where a sand dune and sandbar have isolated two unnamed creeks from Little Sand Bay. Although the site is small it supports moderate to good quality natural communities including Submergent Marsh, Poor Fen, and Boreal Forest as well as four rare plants and a rare animal. Boreal Forest reaches its southernmost range limit in Wisconsin, and remnants flanking the Bayfield Peninsula represent some of the highest quality examples remaining in the state.

The darkly stained lagoon which has formed behind the sparsely vegetated sand dune supports a moderate to low diversity submergent aquatic community, including multiple species of fish, aquatic invertebrates and plants such as floating-leaf pondweed (*Potamogeton natans*), Richardson's pondweed (*P. richardsonii*), floating-leaved broadleaf (*Sparganium fluctans*), and needle spike-rush (*Eleocharis acicularis*). South of the lagoon is a Poor Fen dominated by dense shrubs and a narrow boggy sedge mat. Characteristic species here include slender sedge (*Carex lasiocarpa*) and sweet gale (*Myrica gale*). Further upstream there are inclusions of acid bog indicators such as *Sphagnum* spp., pitcher plant (*Sarracenia purpurea*) and sundew (*Drosera* spp.) on slightly elevated mounds that isolate substrate from mineral rich water. Aquatic plants occur in shallow pools within the fen matrix. The upland edge immediately south of the lagoon supports a good-quality Boreal Forest growing on pit-and-mound microtopography. Dominant canopy trees include mature white cedar (*Thuja occidentalis*), white spruce (*Picea glauca*), hemlock (*Tsuga canadensis*), and white pine (*Pinus strobus*) that has likely not been logged in over 100 years. Importantly, regeneration of many conifer species was noted in this stand, indicating a relatively low deer density in the area. North of the creek a younger mixed hardwood-conifer forest occurs.

\*Area includes lower river and associated wetlands. Area does not include bay or adjacent uplands.

## *Threats*

Composition of the Poor Fen appears to have become more simplified over the last 15 years, possibly indicating changes in hydrology, nutrient input or sedimentation. A 13-acre parking lot associated with the National Park Service visitor center is located less than 150 meters from this site and may impact wetland and aquatic resources due to pollution, increased water temperatures and thus lower dissolved oxygen levels, and disruption of ecosystem and habitat continuity.

## *Additional Comments*

Monitoring future changes in plant composition may be valuable in identifying changes in substrate, hydrology or pH. Across the Lake Superior clay plain, water quality and wetland function are known to be adversely affected by open lands (e.g., developed land, agriculture, young forest) and positively affected by older forests and conifers. Land use analysis of the watershed and associated water quality monitoring could facilitate better understanding of this site's aquatic and wetland resources.

## *Abbreviations and Helpful References*

GLCWC - Great Lakes Coastal Wetland Classification. [glc.org/wetlands/pdf/wetlands-class\\_rev1.pdf](http://glc.org/wetlands/pdf/wetlands-class_rev1.pdf)

National Park Service Apostle Islands National Lakeshore - <http://www.nps.gov/apis/>

WDNR Coastal Wetlands webpages - <http://dnr.wi.gov>, Keyword: "coastal wetlands"

WDNR/NHI - Wisconsin Department of Natural Resources, Natural Heritage Inventory Program.

<http://dnr.wi.gov>, Keyword: "natural heritage"

"Managing Woodlands on Lake Superior's Red Clay Plain" - WDNR publication #PUB-FR-385 2007.

<http://dnr.wi.gov>, Keyword: "bmp landowner guides"



A sand dune isolates the barrier lagoon from Lake Superior (left). A small Boreal Forest (right) is found at Little Sand Bay.

## *Suggested Citation*

Doyle, K., R. O'Connor, and A. Staffen. 2012. Site Description for Little Sand Bay. Wisconsin Department of Natural Resources. Madison, WI. <http://dnr.wi.gov>, Keyword: "coastal wetland little sand bay"



**WISCONSIN COASTAL  
MANAGEMENT PROGRAM**

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